IN THE CLAIM

1 1. (Previously Amended, Currently Amended) A method for managing a memory system

2   having a plurality of subsystems, comprising the steps of:

3   upon accessing the subsystems for a piece of data used by a first process,

4   determining an access time to acquire the piece of data in the

5   memory system;

6   comparing the determined access time to a threshold; and

7   taking an action based on results of the comparing step;

8   wherein

9   ~~a value of the threshold is selected based on whether the value is a~~

10   ~~realistic time for a memory access;~~

11   a memory table includes entries pointing to data blocks storing data

12   for at least one subsystem;

13   the entries are used to locate the data stored in the data blocks; and

14   while the first process is being executed, the memory table working

15   with a memory manager managing the data blocks

16   independent of an operating system working with the

17   memory system and independent of a processor working

18   with the memory system.

1 2. (Previously Amended) The method of claim 1 wherein a data block containing the

2   piece of data is placed in the memory system based on information selected in one

3   or a combination of:

4   a movement pattern of data in the data block,

5   a structure of the memory system, and

6 a cache-level architecture in the memory system.

1 3. (Canceled)

1 4. (Canceled)

1 5. (Previously Amended) The method of claim 1 further comprising the steps of:

2 the memory table using a physical address of a memory page

3 corresponding to the piece of data to convert to a location address

4 corresponding to an entry pointing to the location of the piece of

5 data.

1 6. (Previously Amended, Currently Amended) A method for managing a memory system,

2 comprising the steps of:

3 upon accessing the memory system for a piece of data used by a first

4 process,

5 a processor working with the memory system continuing its

6 functions until it is stalled;

7 comparing a time taken to complete the memory access to a

8 threshold; and

9 taking an action based on results of the comparing step; a value of

10 the threshold being selected based on whether the value is a

11 realistic time for a memory access.

1   7. (Original) The method of claim 6 wherein the action is selected in one or a combination

2   of

3   postponing executing the first process and allowing executing a second

4   process;

5   causing the first process to be switched to a second process; and

6   causing a performance monitor on the memory system or on a system

7   using the memory subsystem.

1   8. (Original) The method of claim 6 further comprising the step of polling a latency

2   manager for the time taken to complete the memory access; the latency manger

3   being part of managing the memory system.

1   9. (Previously Amended) The method of claim 6 further comprising the steps of:

2   using a memory table having entries pointing to data blocks storing data

3   for at least one subsystem; and

4   using the entries to locate the data stored in the data blocks.

1   10. (Previously Amended) The method of claim 9 wherein, while the first process is

2   being executed, the memory table working with a memory manager managing the

3   data blocks independent of a processor working with the memory system and

4   independent of an operating system working with the memory system.

1   11. (Previously Amended, Currently Amended) A method for managing a memory

2   system, comprising the steps of:

3   upon accessing the memory system for a piece of data used by a first

4   process

5   counting a time elapsed from the time the data access starts; the

6   counted time being increased as the data is being accessed;

7   comparing the counted time to a threshold; a value of the threshold

8   is selected based on whether the value is a realistic time for

9   a memory access; and

10   based on results of the comparing step, taking an action selected in

11   one or a combination of

12   postponing executing the first process and allowing

13   executing a second process;

14   causing the first process to be switched to a second process;

15   and

16   causing a performance monitor on the memory system or on

17   a system using the memory system.

1   12. (Previously Amended) The method of claim 11 further comprising the steps of:

2   using a memory table having entries pointing to data blocks storing data

3   for at least one memory subsystem; and

4   using the entries to locate the data stored in the data blocks.

1   13. (Previously Amended, Currently Amended) A computer-readable medium embodying

2   instructions for a computer to perform a method for managing a memory system

3   having a plurality of subsystems, the method comprising the steps of:

4   upon accessing the subsystems for a piece of data used by a first process,

5   determining an access time to acquire the piece of data in the

6   memory system;

7   comparing the determined access time to a threshold; and

8   taking an action based on results of the comparing step;

9   wherein

10   ~~a value of the threshold is selected based on whether the value is a~~

11   ~~realistic time for a memory access;~~

12   a memory table includes entries pointing to data blocks storing data

13   for at least one subsystem;

14   the entries are used to locate the data stored in the data blocks; and

15   while the first process is being executed, the memory table working

16   with a memory manager managing the data blocks

17   independent of an operating system working with the

18   memory system and independent of a processor working

19   with the memory system.

1   14. (Previously Amended) The computer-readable medium of claim 13 wherein a data

2   block containing the piece of data is placed in the memory system based on

3   information selected in one or a combination of:

4   a movement pattern of data in the data block,

5   a structure of the memory system, and

6   a cache-level architecture in the memory system.

1   15. (Canceled)

1   16. (Canceled)

1   17. (Previously Amended) The computer-readable medium of claim 13 wherein the

2   method further comprises the steps of:

3   the memory table using a physical address of a memory page

4   corresponding to the piece of data to convert to a location address

5   corresponding to an entry pointing to the location of the piece of

6   data.

1   18. (Previously Amended, Currently Amended) A computer-readable medium embodying

2   instructions for a computer to perform a method for managing a memory system,

3   the method comprising the steps of:

4   upon accessing the memory system for a piece of data used by a first

5   process,

6   a processor working with the memory system continuing its

7   functions until it is stalled;

8   comparing a time taken to complete the memory access to a

9   threshold; a value of the threshold being selected based on

10   whether the value is a realistic time for a memory access;

11   and

12   based on results of the comparing step, taking an action.

1   19. (Original) The computer-readable medium of claim 18 wherein the method further

2   comprises the step of polling a latency manager for the time taken to complete the

3   memory access; the latency manger being part of managing the memory system.

1   20. (Previously Amended) The computer-readable medium of claim 18 wherein the

2   method further comprises the steps of:

3   using a memory table having entries pointing to data blocks storing data

4   for at least one subsystem; and

5   using the entries to locate the data stored in the data blocks.

1   21. (Previously Amended, Currently Amended) A computer-readable medium

2   embodying instructions for a computer to perform a method for managing a

3   memory system, the method comprising the steps of:

4   upon accessing the memory system for a piece of data used by a first

5   process,

6   counting a time elapsed from the time the data access starts; the

7   counted time being increased as the data is being accessed;

8   comparing the counted time to a threshold, ~~a value of the threshold~~

9   ~~being selected based on whether the value is a realistic time~~

10   ~~for a memory access~~; and

11   based on results of the comparing step, taking an action selected in

12   one or a combination of

13   postponing executing the first process and allowing

14   executing a second process;

15   causing the first process to be switched to a second process;

16   and

17   causing a performance monitor on the memory system or on

18   a system using the memory subsystem.

1   22. (Previously Amended) The computer-readable medium of claim 21 wherein the

2   method further comprises the steps of:

3   using a memory table having entries pointing to data blocks storing data

4   for at least one memory subsystem; and

5   using the entries to locate the data stored in the data blcoks.

1   23. (Previously Amended, Currently Amended) An apparatus for managing a memory

2   system having a plurality of subsystems, comprising:

3   means for, upon accessing the subsystems for a piece of data used by a first

4   process,

5   determining an access time to acquire the piece of data in the

6   memory system;

7   comparing the determined access time to a threshold; and

8   taking an action based on results of the comparing step;

9   wherein

10   ~~a value of the threshold is selected based on whether the value is a~~

11   ~~realistic time for a memory access;~~

12   a memory table includes entries pointing to data blocks storing data

13   for at least one subsystem;

14   the entries are used to locate the data stored in the data blocks; and

15   while the first process is being executed, the memory table working

16   with a memory manager managing the data blocks

17   independent of an operating system working with the

18   memory system and independent of a processor working

19   with the memory system.

1   24. (Previously Amended) The apparatus of claim 23 wherein a data block containing the

2   piece of data is placed in the memory system based on information selected in one

3   or a combination of:

4   a movement pattern of data in the data block,

5   a structure of the memory system, and

6   a cache-level architecture in the memory system.

1 25. (Canceled)

1 26. (Canceled)

1 27. (Previously Amended) The apparatus of claim 23 wherein the memory table using a

2   physical address of a memory page corresponding to the piece of data to convert to

3   a location address corresponding to an entry pointing to the location of the piece of

4   data.

1 28. (Previously Amended, Currently Amended) An apparatus for managing a memory

2   system, comprising:

3   upon accessing the memory system for a piece of data used by a first

4   process,

5   a processor for working with the memory system and for

6   continuing its functions until it is stalled;

7   means for comparing a time taken to complete the memory access

8   to a threshold; a value of the threshold being selected based

9   on whether the value is a realistic time for a memory access;

10   and

11   means for taking an action based on results of comparing.

1 29. (Original) The apparatus of claim 28 further comprising means for polling a latency

2   manager for the time taken to complete the memory access; the latency manger

3   being part of managing the memory system.

1   30. (Previously Amended) The apparatus of claim 28 further comprising a memory table

2   having entries pointing to data blocks storing data for at least one subsystem; the

3   entries being used to locate the data stored in the data blocks.

1   31. (Previously Amended, Currently Amended) An apparatus for managing a memory

2   system, comprising:

3   upon accessing the memory system for a piece of data used by a first

4   process,

5   means for counting a time elapsed from the time the data access

6   starts; the counted time being increased as the data is being

7   accessed;

8   means for comparing the counted time to a threshold, a value of the

9   threshold being selected based on whether the value is a

10   realistic time for a memory access; and

11   means for taking an action selected in one or a combination of

12   postponing executing the first process and allowing

13   executing a second process;

14   causing the first process to be switched to a second process;

15   and

16   causing a performance monitor on the memory system or on

17   a system using the memory subsystem.

1   32. (Previously Amended) The apparatus of claim 31 further comprising a memory table

2   having entries pointing to data blocks storing data for at least one memory

3   subsystem; the entries being used to locate the data stored in the data blocks.

1   33. (Previously Presented) The method of claim 5 wherein the physical address of the

2   memory page is converted from a virtual address of the piece of data.

1   34. (Previously Presented) The computer-readable medium of claim 17 wherein the

2   physical address of the memory page is converted from a virtual address of the

3   piece of data.

1   35. (Previously Presented) The apparatus of claim 27 wherein the physical address of the

2   memory page is converted from a virtual address of the piece of data.